

DOCUMENT RESUME

ED 112 244

95

CE 005 270

TITLE Competency Based Education. An Annotated Bibliography.
INSTITUTION West Virginia State Dept. of Education, Charleston.
Bureau of Vocational, Technical, and Adult Education.
SPONS AGENCY Office of Education (DHEW), Washington, D.C.
REPORT NO VT-102-044
PUB DATE 74
NOTE 52p.

EDRS PRICE MF-\$0.76 HC-\$3.32 Plus Postage
DESCRIPTORS Agricultural Education; *Annotated Bibliographies; Business Education; Health Occupations Education; Home Economics Education; *Performance Based Education; *Resource Guides; Technical Education; Trade and Industrial Education; *Vocational Education

ABSTRACT

Materials included in the bibliography were collected during 1974 for the Education Professions Development Act project, "Familiarizing Teachers with New Curriculum Materials." Objectives of this project were to train vocational teachers in competency-based curricular models. The indexed materials listed in the bibliography are grouped as follows: agricultural education (20 entries), allied health occupations education (25 entries), business and office education (31 entries), home economics education (16 entries), and trade, industrial, and technical education (52 entries). Each entry notes the availability and cost of the item. A 12-item list of general materials concludes the document. (Author/NJ)

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COMPETENCY BASED EDUCATION
-- An Annotated Bibliography

EPDA, Part F, Section 554
Project No. WV-73-7
Familiarizing Teachers With
New Curriculum Materials
March 1, 1974 - Dec. 31, 1974

Fred W. Harrington
Project Director

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Assistant Director

1974

(VT 102 044)

Bureau of Vocational, Technical and Adult Education
West Virginia State Department of Education
Charleston, West Virginia

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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FOREWORD

Materials included in this bibliography were collected during 1974 for the EPDA Project No. WV-73-7, "Familiarizing Teachers With New Curriculum Materials". Objectives of this project were to train vocational teachers in competency based curriculum models so that they could apply this knowledge of new curricular materials to the development of new instruction.

Each entry notes its availability and cost. An "ED" number indicates availability from ERIC Document Reproduction Service, Computer Microfilm International, Corp., P. O. Box 190, Arlington, Virginia 22210. Superintendent of Documents, where stated, has the address: Government Printing Office, Washington, D. C. 20402.

AGRICULTURE EDUCATION

1. "Agricultural Mechanization Competencies Needed by Selected Louisiana Farmers with Implications for Program Planning in Adult Education," C. M. Curtis in Annual Southern Region Research Conference in Agricultural Education Proceedings 21st Mississippi State University, July 25-27, 1972. (ED 072 294)

Includes agricultural mechanical skills chosen by farmers and listed by degree of importance (62 skills).

2. An Analysis of Fifteen Occupational Clusters Identified by the U.S.O.E., Dr. Theodore M. Vestal, Neal A. Baker, Jr., Grayson County College, Sherman/Denison, Texas, 1972, 417 pp. (ED 067 474)

The agriculture cluster contains rationale, methodology, subgrouping into job families and occupational listings. Includes D.O.T. titles and descriptions for research, forestry, land and water management, fisheries and wildlife, mining and quarrying, petroleum and related products, productive agriculture, processing and marketing, services. Written to be used for occupational counseling.

3. An Analysis of Tasks Performed in the Ornamental Horticulture Industry, A. L. Berkey, W. E. Drake, Division of Agricultural and Occupational Education, Department of Education, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York, June 1972, 127 pp. (\$2.00)

Includes nine types of horticulture businesses: Retail florists, farm and garden supply store, landscape services, greenhouse production, nursery production, turf production (sod farms), arborists services, wholesale florists, golf courses (public and private). Tasks and conditions for task performance in each business area are listed by functions, i.e., sales, design, management.

4. Basic Arc Welding Skills. Agricultural Mechanics Job Sheets, Layle D. Lawrence, West Virginia University, College of Agriculture and Forestry, Division of Resource Management, Morgantown, West Virginia, 1973, 31 pp.

Job sheets place step-by-step "how to" information into the hands of the student so that he can develop proficiency at his own pace.

5. Career Preparation Curriculum Guides for High School Vocational Agriculture, Agricultural Education Curriculum Materials Service, Room 254, 2120 Fyffe Road, The Ohio State University, Columbus, Ohio 43210, 1974.

- (1) Career Preparation in Agricultural Production, 692 pp. (\$7.50)
- (2) Career Preparation in Agricultural Supplies and Services, 208 pp. (\$4.00)
- (3) Career Preparation in Agricultural Equipment and Mechanics, 277 pp. (\$4.00)
- (4) Career Preparation in Agricultural Products (Food Processing), 267 pp. (\$4.00)
- (5) Career Preparation in Ornamental Horticulture, 262 pp. (\$4.00)
- (6) Career Preparation in Agricultural Resources, 267 pp. (\$4.00)
- (7) Career Preparation in Forestry, 178 pp. (\$3.50)
- (8) Career Preparation in Environmental Protection, 307 pp. (\$4.00)

Each of these career preparation guides defines a curriculum which is based upon the competencies needed by entry level workers in the occupations. Related competencies are stated in terms of student performance objectives and are grouped into small curriculum units which can be deleted, shifted or organized easily to fit unique state or local curriculum needs. The student performance objectives are used as a basis for the content of the instructional units which also include suggested instructional areas, student learning activities, evaluation processes, instructional materials, and supporting references. Suggested facilities and equipment, teacher preparation and use of advisory committees are also provided in each guide.

6. Clusters of Tasks Performed by Washington State Farm Operators Engaged in Seven Types of Agricultural Production, Grain, Dairy, Forestry, Livestock, Poultry, Horticulture, and General Farming, Gilbert A. Long, 1968, 87 pp. (ED 021 067).
7. Curriculum Guide for Agriculture, Dale Parnell, Oregon Board of Education and the Division of Community

Colleges and Career Education, Salem, Oregon, January 1974 (\$2.50) (Order from Documents Clerk, Oregon Board of Education, Salem, Oregon).

Six major agricultural employment areas: Agricultural production, agricultural supplies, agricultural mechanics, agricultural products (processing), ornamental horticulture, forestry and agriculture resources.

Includes task analyses, curriculum objectives and plan, course descriptions, occupational specialty courses, and suggested equipment and facilities.

8. Curriculum Guide for Forest Products, Dale Parnell, Oregon Board of Education and the Division of Community Colleges and Career Education, Salem, Oregon, July, 1972, 88 pp. (\$2.50) (Order from Documents Clerk, Oregon Board of Education, Salem, Oregon).

Areas: Forester aide, logger, sawmill worker, veneer and plywood mill worker, composition board mill worker, woodworking machine operator, woodworking mill hand, pulp and paper mill worker, grader-tester.

Includes task analyses, curriculum objectives and plan, course descriptions, occupational specialty courses, and suggested equipment facilities.

9. Determining Weight and Cost of Structural Steel. A Programmed Instruction Unit, Layle D. Lawrence, College of Agriculture and Forestry, Division of Resource Management, Agricultural Education, West Virginia University, Morgantown, West Virginia, 1974, 13 pp.

A programmed instruction unit to be used in learning a method of determining weights of structural steel components by use of simple formulas. Tenth grade level.

10. Formation of Behavioral Objectives for Training in Selecting Ornamental Horticulture Jobs, H. V. Griffith, Oklahoma State Department of Vocational and Technical Education, Stillwater, Division of Research, Planning and Evaluation, September 1971, 79 pp. Condensed Ed. D. (VT 014 770)

Tasks are listed in competency code sequence in these categories: Plant production, landscape maintenance,

sales, management, record keeping, equipment operation, equipment maintenance. Also included are 94 behavioral objectives derived from the 90 competencies validated in the survey.

11. Job or Skill Work Sheets, The Pennsylvania State University, Department of Agricultural Education, University Park, Pennsylvania 16802, 1974 (Single sheets @ \$.05 each; Pads of 25 sheets @ \$.50 each).

Available work sheets are: Sharpening the Twist Drill Bit, Drawbar Hitch Pin, Tool Sharpening Gauge, Cleaning a Paint Brush, Cleaning and Servicing an Electric Motor, Feed Scoop, Cold Chisel, Extension Card Stand, Sawhorse, Nail and Tool Carrier, Concrete Float, Utility Cart, Shoe Scraper with Concrete Base, Sharpening a Plane Iron, Sharpening a Wood Chisel, Adjustable Safety Jack, Reading the Micrometer, Individual Student Wiring Board (General Instructions), Individual Student Wiring Board (Job Work Sheet), Extension Cord, Welded "C" Clamp, Plumbing Exercise in Pipe Fitting, Hammer and Nail Box Exercise, Repair and Starting Stand for Vertical Shaft Engine, Momentum Wheel for Operating a Vertical Shaft Engine on a Starting Stand.

12. Learning Activity PAC, Department of Public Instruction, Bureau for Career and Manpower Development, Madison, Wisconsin, Vocational Education Pilot Program Workshop, University of Wisconsin, Platteville, 1972.

(1) Hydraulics

(2) World of Work. Part II

LAP units include: Introduction, learning objectives, pre-assessment, pre-assessment answer sheet, lessons (components, objectives, instructions, learning activities, self evaluation).

13. The Park Caretaker: A Suggested Course Outline for Buildings and Grounds Maintenance, J. Richard Campbell, Mineral County Vocational-Technical Center, Keyser, West Virginia, 1973, 7 pp. Developed in an agricultural education workshop at West Virginia University conducted by College of Agriculture and Forestry, Division of Resource Management.

Three sub-units of objectives, outline and references.

14. Resource Unit for Teaching Basic Principles of . . . in Agricultural Education Courses in Wisconsin, Department of Public Instruction, Bureau for Career and Manpower Development, Madison, Wisconsin, Vocational Agriculture Pilot Program Workshop, University of Wisconsin, Platteville, 1972.
- (1) The Canning Industry
 - Part II Vegetable Processing
 - (2) Conservation - Air
 - (3) Basic Dairy Herd Health
 - (4) Machinery Maintenance - Agricultural Sales and Services - Tractors - Tillage Equipment
 - (5) Mechanics - Materials Handling
 - (6) Ornamental Horticulture - Greenhouse Management
 - (7) Dairy Products Manufacturing - Butter and Cheese
 - (8) Improved Reading Through Agribusiness Careers
 - (9) Mechanics Concepts
 - (10) Outdoor Winter Recreation

Units include objectives and problem areas.

15. A Study to Determine Competencies Needed by Employees Entering Agricultural Mechanics Occupations, D. D. Bishop, M. L. Amberson, B. E. Richardson, Montana State University, Department of Agricultural and Industrial Education, Bozeman, Montana, July 1973, 124 pp.

Judgments, skills and attitudes needed by potential employees in order to qualify for available jobs in agribusiness and agricultural production.

16. A Study to Determine Competencies Needed by Employees Entering Agricultural Production Occupations, M. L. Amberson, D. D. Bishop, B. Agocs, Montana State University, Department of Agriculture and Industrial Education, Bozeman, Montana, June 1973, 185 pp.

Knowledges, skills and attitudes needed by potential employees in order to qualify for available jobs in agribusiness and agricultural production.

17. A Study to Determine Competencies Needed by Employees Entering the Grain, Feed and Seed Business, A. W.

Donahoo, M. L. Amberson, D. Bishop, Montana State University, Department of Agricultural and Industrial Education, Bozeman, Montana, August 1972, 85 pp.

Knowledges and skills needed by agricultural workers in the grain, feed and seed industry.

18. Task Inventories, Nevin Frantz, Jr., University of Georgia, College of Education, Division of Vocational Education.

Horticulture.

19. Task Lists, Trade and Industrial Education, Materials Laboratory, College of Education, Ohio State University, Columbus, Ohio.

Task lists for each of the following: Arborists services, farm and garden stores (business areas tasks), public and private golf courses, greenhouse production, landscape services, nursery production, retail florists, turf production business, wholesale florists.

20. Units developed during a summer workshop conducted by the agricultural education faculty of the Division of Resource Management, College of Agriculture and Forestry, West Virginia University. Materials serve as a unit plan for vocational agriculture teachers to use with groups and as an individual study guide for students. Warren G. Kelly, O. Claude McGhee, Layle D. Lawrence, 1973.

Agricultural Sales and Service. Business Procedures
Agricultural Machinery. Row Crop Planters
Agricultural Sales and Service. Becoming Placed and
Starting the Job
Ornamental Horticulture. Harvesting and Planting
Trees and Shrubs
Conservation - Forestry. Christmas Tree Production
Ornamental Horticulture. Pruning

AGRICULTURE EDUCATION

Agricultural Production

01.0100

See 2, 5, 7, 14, 16, 19

Agricultural Supplies and Services

01.0200

See 5, 7, 17, 19, 20

Agricultural Mechanics

01.0300

See 1, 4, 5, 7, 9, 11, 12, 14, 15, 20

Ornamental Horticulture

01.0500

See 3, 5, 7, 10, 14, 18, 20

Forestry (Conservation - Forestry)

01.0700

See 2, 5, 7, 8, 20

ALLIED HEALTH OCCUPATIONS EDUCATION

1. An Analysis of Fifteen Occupational Clusters Identified by the U. S. Office of Education, Dr. T. M. Vestal and N. A. Baker, Jr., Grayson County College, Sherman/Denison, Texas, 1972, 417 pp. (ED 067 474).

The health cluster includes the following job families, which are divided into occupational listings, using D.O.T. titles and descriptions: Mental Health, Medical and Biological Science, Dentistry, General Hospital and Medical Emergency, Administration, Personal and Community Health, Pharmaceutical Science, Professional Medical Supportive Personnel and Medical Professionals.

2. Career Model for Nurse Practitioners, University of California, Division of Vocational Education, Allied Health Professions Project, 1003 Wilshire Blvd., Santa Monica, California 90401, 94 pp., 1972. (\$3.00)

A nursing curriculum proposing five stages, from entry level to graduate research work. Stages I and II cover Basic Nurse Practitioner; Stages III through V prepare teachers, administrators and researchers. Ideas include core curriculum materials, suggested instructional units, and an approach to student performance evaluation.

3. The Clinical Instructor Training Program: Development, Operation, Evaluation. Final Report, Miles H. Anderson, University of California, Division of Vocational Education, Los Angeles, California, September 1971, 88 pp. (\$2.00)

Evaluation of a study to learn if on-the-job training of Allied Health personnel could be improved by offering supervisors a short seminar in techniques of teaching. In a 12-hour program, participants trained in a 3 year period. Results say that the program should be continued and expanded and that similar short seminars be held.

4. A Comprehensive Careers Cluster Curriculum Model, Dr. R. F. Bortz, Southern Illinois University, Division of Vocational and Technical Education, Carbondale, Illinois, June 1972, 86 pp. (ED 069 867)

Concerns the Health Occupations Cluster Curriculum Project and the Health Care Aide Curriculum Project. Orientation

for grades 9 and 10 in health careers. Curriculum material for 11th and 12th grades to prepare for entry level.

5. Curriculum Guide for Health Occupations, Dale Parnell, The Oregon Board of Education, Salem, Oregon, December 1969, 125 pp. (\$2.50)

Task analyses for these key occupations: Dental assistant, dental hygienist, dental laboratory technician, inhalation therapist, medical assistant, medical-laboratory assistant, nurse aide, nurses (general duty), nurse (licensed practical), occupational therapy aide. Cluster curriculum for grades 9 - 12 listed; objectives given. Specialty courses content for: Human body structure and functions, microbes and disease, health team relations, patient relations, health care skills. Appendices include evaluation, equipment and supplies, instructional materials, bibliography, instructor qualifications and opportunities in Health Occupations.

6. Dental Auxiliary Occupations. Task Analysis Data, R. D. Kingston, T. E. Freeland, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Projects, Revised February 1971, 97 pp. (\$4.00)

The functional areas delineated are: X-ray tasks, office and business procedures, dental assisting and chairside functions, dental laboratory tasks. Occupational group consisted of dental assisting, dental hygiene and dental laboratory technology.

7. Development and Validation of the Task Inventory. Hospital Pharmacy Technician Project, R. R. Henrich, K. L. Goldsmith, California University, Los Angeles, Division of Vocational Education, February 1971, 44 pp. (VT 013 686)

Describes the creation of the medical facility pharmacy technician task list for the purposes of curriculum development. Task breakdown and analysis of the tasks provided.

8. A Health Career Development Program for the Rural High School, H. R. Rowe, Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio, 1970, 120 pp.

Includes core performance elements, unique performance elements, and activities and instructional aids. For the cluster: Medical assistant, medical laboratory assistant, medical record clerk, nurse aide, surgical technician, visiting home health aide, and ward clerk.

9. The following materials are from the University of the State of New York, the State Education Department, Division of Occupational Education Instruction, Bureau of Health Occupations Education, Albany, New York (single copies complimentary).

- (1) Health Occupations Education Program Development Guide No. 3: Health Services.
- (2) Health Occupations Education Program Development Guide No. 5: Dental Assisting.
- (3) Health Occupations Education Program Development Guide No. 6: Medical Assisting.

These three guides include program description, steps in establishing program, course outline, required instructional classroom area, laboratory area and laundry-storage area.

- (4) Health Occupations Education Program Development Guide No. 11: School Health Assisting.

Includes occupational task analysis, training program development and organization, suggested curriculum outline consisting of job responsibilities, competencies, and learning unit outline.

- (5) Health Services Training Guide.

Details course of study for the above Guide No. 3. Includes job responsibility, competencies, essential learning and learning experience.

10. Introduction to Allied Health Careers. Student's Manual, Doris Rosenthal, Phyllis Agran, University of California, Division of Vocational Education, Allied Health Professionals Project, Los Angeles, November 1971, 269 pp. (\$5.00)

Each module's units include objectives, student activities, textual and other information, sample forms, tests. Modules are Orientation to the Health Care System, Meeting the Needs of the Patient, and the Health Care Community.

11. Introduction to Allied Health Careers. Teachers Manual, Doris Rosenthal, Phyllis Agran, University of California, Los Angeles, Allied Health Professionals Project, Revised March 1972, 564 pp. (\$15.00).

Curriculum for use in 10th grade (Phase I of a 3 phase curriculum) consists of 3 modules. Each module includes a purpose (relates unit to the curriculum as a whole), objectives, description of the procedures of the unit, and suggested activities and materials.

The three modules are (1) Orientation to the Health Care System: Overview of facilities, occupations, problems and practices; (2) Meeting the Needs of the Patient through the Health Care System: Uses fictitious case histories to introduce students to the way personnel function in caring for patients, and to the knowledge and skills needed for each task; (3) Working in the Health Care Community: Four weeks, student works in a health care facility. Includes unit of preparation before the work and a summation unit after it.

12. Job Description and Organizational Analysis for Hospitals and Related Health Services, U. S. Department of Labor, U. S. Training and Employment Service in cooperation with the American Hospital Association, Revised Edition 1970, 733 pp. (Superintendent of Documents, \$4.25)

Job descriptions include job duties; machines, tools, equipment and work aids; education training and experience; worker traits of aptitudes, interests, temperaments, physical demands and working conditions; job relationships; and professional affiliations. Three main divisions are administrative, professional care, and plant operation and maintenance.

13. K-12 Course Goals in Health Education, 1st Ed., 314 pp., Tri-County Goal Development Project and Northwest Regional Educational Laboratory, Portland, Oregon (\$6.00 From Commercial-Educational Distributing Services, P. O. Box 8723, Portland, Oregon 97208).

Consists of learning goals, i.e., program and course goals. Also, taxonomies of subject matter and of knowledge and process learning; integration of basic skills and career education into the total curriculum.

14. Medical and Dental Career Cluster. Dental Laboratory Technology, Dallas Independent School District, Dallas, Texas, 1973, 361 pp.

Contains purpose of course, goals of the course, list of career competency goals, and 35 modules. Each module has two parts - Behavioral Objective and Student Learning Plan. Behavioral Objectives list several career competency goals and their behavioral statements, conditions or limitations, and criteria of acceptance. Student learning plans contain prerequisite capabilities, overview, learning activities, references, supplies and materials, and enrichment activities.

15. Nursing Skills for Allied Health Services, Dr. Lucile Wood, W. B. Saunders Co., Publishers, Philadelphia, Pennsylvania, 1972. Vol. I, 394 pp. \$5.00; Vol. II, 374 pp. (\$5.00 each volume)

A text designed to acquaint all levels of nursing personnel with the basic skills and knowledge of the nursing profession. (Part of the Allied Health Professions Project, UCLA)

16. Occupational Analysis. Medical Office Assistant, O. E. Diccio, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Project, December 1971, 103 pp. (\$3.00)

The five categories are registered nurse, licensed professional or vocational nurse, medical office assistant (technical), medical office assistant (generalist), and administrative and clerical. The four categories of task analysis are (1) clerical, secretarial and management, (2) business office, (3) diagnostic tests and procedures, and (4) examination and treatment room procedures.

17. Occupational Analysis of Social Service in Medical Care Facilities, T. David Ainsworth, Katherine L. Goldsmith, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Project, August 1971, 78 pp.

D.O.T. titles for Social Service are director, social work assistant, social work - medical, and social work - psychiatric. Task analysis consists of the percentage performing task and mean frequency of performance. Analysis dealt with six major Social Service functions: Intake, information and referral, treatment, supportive, community, and administrative.

18. Program Guide. A Guide for Development and Operation of a Secondary School Allied Health Career Program, Jerome Epstein, University of California, Los Angeles, Division of Vocational Education, September 1972, 143 pp. (\$5.00)

This guide was written to help those planning and implementing a Secondary School Allied Health Occupations Program which combines school Health Careers Education with specific task training and work experience in Health Care Facility. Introduction gives background, philosophy and facts for presenting, planning and developing programs.

19. Respiratory Care/Inhalation Therapy Occupations. Task Analysis Data, Dr. Thomas E. Freeland, Dr. Katherine L. Goldsmith, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Project, October 1971, 96 pp. (\$3.00)

Position titles include: Administrators/supervisors, nurses, therapists, technicians, aides/orderlies. Analyses consist of these tasks: Administrative and supervision; education, training and research; diagnostic; clerical and miscellaneous.

20. Skills, Abilities, and Understandings Needed by Office and Health Occupations Personnel, M. C. Gibb, M. Blanchard, Nebraska Occupational Needs Research Coordinating Unit, Lincoln, Nebraska, May 1971, 22 pp. (VT 013 622)

Defines results of a study of occupational competencies needed by personnel employed in physicians' offices in Nebraska.

21. Student Training Record Booklets, University of California, Los Angeles, California, Division of Vocational Education, Allied Health Professions Projects. (\$.35 each)

Small booklets listing tasks students should learn in the hospital. Available for nurse aide, central service, hospital business office, inhalation therapy aide, personnel training, hospital refrigeration and air conditioning, pharmacy aide, occupational therapy aide, social work aide, physical therapy aide, radiology aide, clinical laboratory assistant.

22. A Study of Nursing Occupations: Registered Nurse, Licensed Vocational/Practical Nurse, Nursing Aide, K. L. Goldsmith,

M. E. Jensen, L. A. Wood, D. Zimmerman, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Project, Reprint May 1972, 121 pp. (\$4.45)

Includes task identification in six functional areas:
(1) Diversional Therapeutic and Assistance Activities;
(2) Personal Hygiene and General Comfort; (3) Nutrition and Elimination; (4) Treatments, Procedures, Medications and Diagnostic Activities; (5) Observation and Communication; (6) Administration, Coordination and Housekeeping.

Dimensions of task performance deemed relevant to the building of innovative training programs; Human interaction, critical tolerance, psychomotor, coordination, cognitive level, appropriateness.

23. Task Inventories, University of California, Los Angeles, Division of Vocational Education, Allied Health Profession Projects, Revised March 1972, 248 pp. (\$8.65)

Task analyses for: Biomedical Photography, Central Service, Clinical Laboratory, Community Health Nurse, Dental Auxiliary, Electroencephalography, Engineering Maintenance, Food Service, Hospital Admitting Office, Hospital Business Office, Housekeeping, Laundry and Linen Service, Medical Office Assistant, Medical Records, Nursing, Pharmacy Technician, Purchasing, Radiology, Respiratory Care/Inhalation Therapy, Sanitation (Health Care Facility and Public Health), Social Service, Ward Management.

24. Task Lists, Trade and Industrial Education Material Laboratory, College of Education, Ohio State University, Columbus, Ohio.

Task list for Medical Assistant.

25. Task List Draft for Medical Laboratory Occupations, H. Taub, M. Ellison, California University, Los Angeles, Division of Vocational Education, February 1970, 33 pp. (VT 014 743)

Task lists of tasks performed by medical technologists when conducting laboratory and management functions.

ALLIED HEALTH OCCUPATIONS EDUCATION

Dental Assisting

07.0101

See 5, 6, 9

Dental Hygiene

07.0102

See 5, 6

Dental Laboratory Technology

07.0103

See 5, 6, 14

Medical Laboratory Assisting

07.0203

See 5, 18

Medical Laboratory Technology, Other

07.0299

See 25

Nursing (Associate Degree)

07.0301

See 15, 22

Practical (Vocational) Nursing

07.0302

See 5, 15, 22

Nursing Assistance (Aide)

07.0303

See 5, 8, 15, 22

Nursing (Other)

07.0399

See 5

Inhalation Therapy

07.0903

See 5, 19

Medical Assistant

07.0904

See 5, 8, 9, 16, 24

Health Occupations Education, Other

07.9900

See 7, 8, 9, 17

BUSINESS AND OFFICE EDUCATION

1. An Analysis of Fifteen Occupational Clusters Identified by the U. S. Office of Education, L. M. Vestal, N. A. Baker, Jr., Grayson County College, Sherman/Denison, Texas, 1972, 417 pp. ED 067 474.

The Business and Office cluster has the following job families, which include occupational listings and D.O.T. titles and descriptions: Accounting, 14.0100, computer, 14.0200, secretarial science, 14.0700, management, 14.0800, personnel, 14.0600, finance - insurance - real estate and office (clerical), 14.9900.

2. Basic Components of Office Work - An Analysis of 300 Office Jobs, L. W. Erickson, South-Western Publishing Co., Burlingame, California, 1971, 31 pp.
3. Business Data Processing Occupational Performance Survey Interim Report. R & D Series #88, Sidney D. Borchert, John W. Joyner, Ohio State University, Center for Vocational and Technical Education, Columbus, Ohio, March, 1973, 84 pp. (\$1.25 each - Superintendent of Documents, Stock No. 1780-01157) (ED 078 125)

Task analysis and criteria for appropriate task inventory statements. Job classifications include: manager of electronic data processing, supervisor of computer operations, systems and procedures analysts, programmer (junior, lead or senior), and computer console operation.

4. Business Education for the Emergent Office. Interim Report, Harry Huffman, Dale G. Gust, Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio, June 1970, 172 pp. (NOBELS).

Identifies high-priority and commonly-accepted abilities emerging and increasing in importance in offices. Develops general and specific instruction plans to aid business and office instructors. Includes a list of 41 emerging office activities; also eighteen general instructional plans to be used to generate numerous instructional plans for individual performance goals.

5. Business Education: Bookkeeping 10-12, Business Law 10-12, General Business 10-12, Secretarial Skills 10-12, Instructional Objectives Exchange, P. O. Box 24095, Los Angeles, California 90024 (\$8.00 each)

6. California Business Education Program Guide for Office and Distributive Occupations, Bureau of Business Education, California State Department of Education, Sacramento, California, and UCLA, Division of Vocational Education, Office and Distributive Education, Second Draft, 1973.

Competency Modules (numerical system). Job descriptions, common core, office core, general office clerk, clerk typist, stenographer, distributive occupations. Also includes implementation, administrative systems model, learner systems model, strategies.

7. Clusters of Tasks Associated With Performance of Major Types of Office Work. Final Report, Edward A. Perkins, Washington State University, Pullman, Washington, January, 1968, 210 pp. ED 018 665.

Task lists are in rank order and frequency of performance. Six broad categories of office work include: Supervisory, 14.0800, secretarial-stenographic, 14.0700, clerical, 14.0300, bookkeeping-accounting, 14.0100, business machine operators, 14.0300, data processing, 14.0600.

8. Curriculum Diffusion Seminar of the Coordinating Council for Occupational Education, Carbondale, Illinois, June 18 - 20, 1974 (no reproduction allowed).

Pretests and Post-tests for Office Occupations Modular Curriculum

Teachers Key for Office Occupations Modular Curriculum

34 Modules in Business and Office

Modules containing brief units consisting of introduction, length in class hours and credits, materials, rationale, objective, pretest, learning activity, progress measure, posttest.

9. Curriculum Guide for Accounting Occupations, Dale Parnell, The Oregon Board of Education, Salem, Oregon, 1973 (\$2.50).

Key occupations are accountant, assistant accountant, junior or assistant auditor, bookkeeper, controller, certified public accountant. This guide lists performance objectives, required knowledges, expected behaviors (skills) for the student, and suggested learning activities.

10. Curriculum Guide for Clerical Occupations, Dale Parnell, The Oregon Board of Education and the Division of Community Colleges and Career Education, Salem, Oregon, 1971, 106 pp. (\$2.50)

Task analysis, curriculum objectives and plan, course descriptions for occupations: General clerk typist, receptionist, and key punch operator.

11. Development of Performance Goals for a New Office and Business Education Learning Systems: Part I., Analysis of Hardware Used by Office Workers; and Part II, Analysis of Social Interaction Critical Incidents. Final Report, C. C. Calhoun, Georgia University, College of Education, Athens, Georgia, January, 1970, 83 pp. ED 073 256.

12. Development of Task Performance Statements for a New Office and Business Education Learning System (NOBELS). Final Report, F. W. Lanham, Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio, September, 1972, 375 pp. ED 068 728.

There are 373 task statements for the following: Numerical clerical records; internal services; typing communication; electronic data processing; personnel; sales; inventory, shipping and receiving; purchasing; production; and miscellaneous.

13. Educational Learning Packages. Continuous Progress Education, Kanawha County Schools, Charleston, W. Va.

Learning packages for shorthand include general content description, prerequisites, behavioral objectives, sample test items, pre-test, and instructional experiences.

14. A Health Career Development Program for the Rural High School, H. R. Rowe, Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio, 1970, 120 pp.

Includes Core Performance Elements, Unique Performance Elements, and Activities and Instructional Aids. For the cluster medical record clerk.

15. Improving a Rural Area School Program in Vocational Business and Office Education by Utilizing an Individualized Multi-Media Instructional Approach, George Lipscomb, Louis Loudermilk, Bonnie Shaffer, Preston County Board of Education, Kingwood, West Virginia, April, 1974.

Two Units: Gregg Transcription III, 112 pp. Filing, 41 pp.

Each unit includes job sheets, which consist of an objective, materials needed, procedure and next activity.

16. Individualized Instruction in Business and Office Education, W. R. Pasewark, D. Kilchenstein, American Vocational Association, Washington, D. C., 76 pp. (\$2.00)

Describes programs across the country in scheduled classes in unscheduled learning laboratories.

17. Individualized Learning Systems. Bookkeeping, Oregon Board of Education, Salem, Oregon, 1973. (\$28.50 from Continuing Education Publications, Extension Annex, Corvallis, Oregon 97331)

This set consists of 85 learning packets. Each packet provides purpose, student behavioral objectives, learning activities with the reason and/or content of the activity assigned to the student, word power, information sheets, performance activities, self-tests, and self checks, pre- and post-tests.

18. Job Descriptions and Organizational Analysis for Hospitals and Related Health Services, U. S. Department of Labor, U. S. Training and Employment Service in cooperation with the American Hospital Association, Revised Edition 1970, 733 pp. (Superintendent of Documents, \$4.25)

Job descriptions include job duties; machines, tools equipment and work aids; education, training and experience, worker traits (attitudes, interests,

temperaments, physical demands and working conditions), and professional affiliations. Jobs include: data processing, 14.0200, financial management, 14.0800, clerical, 14.0300, personnel, 14.0600, secretarial, 14.0700, and medical records, 10.0700.

19. "Job Skills, Job Knowledges and Performance Objectives," Capital Area Career Center, Ingham Intermediate School District, Mason, Michigan.

Cluster: Business and Visual Communications.
Program: Graphics-Visual Communication. Occupations: Duplicating Machine Operator, Compositor, Camera Man, Finishing Technician, Press Operator.
Program: Management Training. Occupations: Small Business Owner, Retailing, Manager-Department Division.

20. K-12 Course Goals in Business Education, 1st ed., 297 pp., Tri-County Goal Development Project and Northwest Regional Educational Laboratory, Portland, Oregon. (\$6.00)

Consists of learning goals, i.e., program and course goals. Also, taxonomies of subject matter and of knowledge and process learning, integration of basic skills and career education into the total curriculum.

21. LAP'S In Environmental Studies and Business Education, Walt Kemmerer, Mount Vernon School District No. 320, Mount Vernon, Washington, March 1972.

Five LAP's: "Money Ain't Funny But It's Great To Participate," "The Stock Market," "Corporate Connivance," "Planned Obsolescence," and "Resource Substitutes". Each LAP includes rationale, primary and secondary ideas and self assessment. Each secondary idea consists of learning objectives, learning activities and tests.

22. Occupational Analysis for Business Data Processing Technology, 2nd Edition, Coordinating Council for Occupational Education, Olympia, Washington, 1972. (\$1.50)

Each function includes definition, rationale, tasks and objectives.

23. Occupational Analysis of Tasks Performed in a Medical Record Department, M. L. Gosman, G. B. Krishnamurty, K. L. Goldsmith, D. A. Tarter, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Project, June, 1972, 80 pp. (\$2.15)

Occupations served: Medical secretary (14-0702), transcriber (14.0702), medical record clerk (14.0499), and clerk typist (14.0302). Task analysis in seven categories.

24. An Office Employment Profile. Job-Entry Requirements, Behavior Patterns, and Career Opportunities, N. F. Kalluas, Department of Business Education, University of Iowa, Iowa City, Iowa, 1973, 41 pp.

Includes knowledge and skill requirements for beginning office workers.

25. Programmed Opportunity With Employment Referral (POWER), J. Smith, V. Oberbillig, Borah High School and State Board for Vocational Education, Boise, Idaho, 1973.

Consists of mini packages for each subject. Each minipac has objectives, activities, and a list of available media/instructional material. (programmed instruction)

26. A Research Model for Identification of Task and Knowledge Clusters Associated With Performance of Major Types of Office Employees' Work. Final Report, Edward A. Perkins, Jr., F. Ross Byrd, Washington State University, Pullman, Washington, December, 1966, 73 pp. ED 010 656.

27. Secretarial Science Occupational Performance Survey. Interim Report. R & D Series #87, Sidney D. Borchert, John W. Joyner, Ohio State University Center for Vocational and Technical Education, Columbus, Ohio, March, 1973, 91 pp. (\$1.25, Superintendent of Documents, Stock No. 1780-01152)

Task analyses for general secretary, legal secretary, medical secretary, office manager, executive secretary, and administrative assistant.

28. Steno-Secretarial Curriculum Guide, Dale Parnell, Oregon Board of Education and the Division of Community College and Career Education, Salem, Oregon, May, 1970, 91 pp. (\$2.50)

Task analyses for secretarial, legal secretary, stenographer. Curriculum objectives and plan and course descriptions.

29. Task Lists, Trade and Industrial Education Materials Laboratory, College of Education, Ohio State University, Columbus, Ohio.

Task list for administrative assistant, bookkeepers, and information-communications clerk.

30. A Taxonomy of Office Activities for Business and Office Education. Research Series 12, Harry Huffman, Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio, July, 1968, 164 pp. ED 021 140.

This taxonomy covers the operating domain, the interacting domain, and the managing domain. Also, hardware and software are discussed in depth.

31. Vocational Behavioral Objectives. A Guide for Individualizing Instruction. Series II (#56-1112, \$35.50), 1973, Westinghouse Learning Corp., 100 Park Ave., New York, New York 10017.

One occupational area in Series II is Business and Office including modules for general secretary, computer operator, and offset duplicator. Each has Vocational Behavioral Objectives, Test Items, Evaluation, and Occupational Information.

BUSINESS AND OFFICE EDUCATION

Accounting and Computing Occupations

14.0100

See 1, 5, 7, 9, 17, 29

Business Data Processing Systems

14.0200

See 1, 3, 7, 10, 15, 18, 19, 22, 31

Clerical

14.0300

See 1, 6, 7, 10, 18, 23, 29

Information Communication

14.0400

See 23

Personnel Training and Related Occupations

14.0600

See 1, 18

Stenographic, Secretarial, and Related Occupations

14.0700

See 1, 5, 6, 7, 14, 15, 18, 23, 27, 28, 31

Supervisory and Administrative Management

14.0800

See 1, 7, 18, 29

HOME ECONOMICS EDUCATION

1. An Analysis of Fifteen Occupational Clusters Identified by the U. S. Office of Education, Dr. Theodore M. Vestal, Neal A. Baker, Jr., Grayson County College, Sherman/Denison, Texas, 1972, 417 pp. ED 067 474.

The cluster of Consumer and Homemaking Education includes job families and occupational listings for food specialist, housing and household equipment specialist, textiles and clothing specialist, family economics and home management, family relations and child development, extension services.

The cluster of Personal Services includes the following job families: Domestic service; lodging and related service occupations; barbering, cosmetology and related occupations; drycleaning, laundry and apparel service; stewards, attendants, hosts and miscellaneous personnel; domestic animal care; food and beverage preparation and service. D.O.T. job titles and descriptions included.

2. Career: Food Service, Cahners Career Education Series, Cahners Books, 89 Franklin Street, Boston, Massachusetts 02110, 1974 (\$3.75 each module, less 20% for 10 or more modules).

Includes 35 modules under Food Preparation, Food Service, and Restaurant Management. Each module covers a set of skills or knowledge required for a specific job. Each consists of objectives, introduction, information, learning experiences, tally total. A student works through at his or her own pace.

3. Child Care. The Babysitter. Initial Development, by J. Coombs, J. Bambord, and D. Funk, Wymore Vocational Technical Center, Orange County Career Development Program, Orlando, Florida.

Includes job description, task list, job prerequisites, job objectives. Each unit begins with a task detailing sheet and contains goal, specific objectives, activities, materials and resources, study

questions, worksheet, reference sheet, pre- and post tests and evaluation. Related publication is Child Care. Introduction to the Babysitter.

4. Consumer Education Curriculum Modules: A Spatial-Process Approach, North Dakota State University, Fargo, North Dakota, 1974 (Available from Superintendent of Documents: Stock No. 1780-01284, \$17.75 per set).

Five Volumes: Guide, Inquire Process, Valuing Process, Decision Process, Action Process. This set of modules focuses upon the processes by which information is acquired, values are explored, decisions are made and action is taken. Modules are intended for flexible use and for independent learning and individualized learning.

5. Curriculum Guide for Food Service Occupations, Dale Parnell, The Oregon Board of Education, Salem, Oregon, January, 1974 (\$2.50).

Fourteen jobs are included in this occupational cluster. Task analysis, expected behaviors for the student, curriculum objectives and plan, course and descriptions for occupations are included.

6. Fashion Industry Series
 1. Career Exploration in the Fashion Industry - introduction to the different segments of the fashion field.
 2. Apparel Design and Production
 3. Textile Design
 4. Fashion Merchandising
 5. Dry Cleaning and Laundering

Series 2 - 5 are suggested job-preparatory (skill development) program guides. They include desired competencies, behavioral objectives, and outlines of teaching modules content and learning experiences.

7. Home Economics Occupations. An Exploratory Unit, Dale Parnell, Carrol de Broekert, Leonard Kunzman, Division of Community Colleges and Career Education and the Oregon Board of Education, Salem, Oregon, 1973, 48 pp.

Six units each including goals, concepts, learning experiences, generalizations. Appendices include vocabulary list, reading reports form, attitude reactor sheet, resource visitors report, audiovisual report and others.

8. Homemaking Education in Oregon Secondary Schools, L. P. Minear, State Department of Education, Salem, Oregon, 1965, 231 pp.

Each area lists challenge (behavioral objective), goals, competencies, learning experiences, teacher aids, evaluations.

9. Identification of Tasks in Home Economics Related Occupations, developed by the Department of Home Economics Education at the Iowa State University and University of Northern Iowa, 1974 (complimentary from the Department of Public Instruction, Area School and Career Education Branch, Grimes State Office Building, Des Moines, Iowa 50319).

Food Service, 257 pp.

Interior Design and Furnishings, 102 pp.

Clothing Apparel and Textile Services, 113 pp.

Institutional and Household Maintenance, 169 pp.

Family and Community Services, 146 pp.

Care/Development of Children

10. Job Descriptions and Organizational Analysis for Hospitals and Related Health Services, U. S. Department of Labor, U. S. Training and Employment Service in cooperation with the American Hospital Association, Revised Edition 1970, (Superintendent of Documents \$4.25) 733 pp.

Listed are job duties: Machines, tools, equipment and work aids; education, training, and experience; worker traits of attitudes, interests, temperaments, physical demands and working conditions; and professional affiliations.

Relevant jobs departments are Dietetic, Housekeeping and Laundry.

11. K-12 Course Goals in Home Economics, 1st ed., 263 pp., Tri-County Goal Development Project, Portland, Oregon, and Northwest Regional Educational Laboratory, Portland, Oregon (\$6.00).

Consists of learning goals including program and course goals. Also, taxonomies of subject matter and of knowledge and process learning; integration of basic skills and career education into the total curriculum.

12. Occupational Analysis. Hospital Food Service Department, M. L. Gosman, G. B. Krishnamurty, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Project, September, 1971, 85 pp. (\$3.00)

Includes task data for general helper, food production supervisor, food service supervisor, assistant dietitian, dietitian, and food service administrator. Also includes discussion on curriculum development.

13. Supervised Food Service: A Suggested Guide, Florida State Department of Education, Home Economics Section, Tallahassee, Florida, 1969, 183 pp. VT 012 228.

Competencies for food service workers, criteria for judging student institutional food services.

14. Task Inventories, Nevin Frantz, Jr., University of Georgia, College of Education, Division of Vocational Education.

Food Service
Child Care

15. Task Lists, Trade and Industrial Education Materials Laboratory, College of Education, The Ohio State University.

Task lists for each of the following: Alteration Specialist, Baking, Child Care Teacher Aide, Community and Home Service Occupations, Food Preparation and Catering, Furniture Upholstery and Repair.

16. Vocational Behavioral Objectives. A Guide for Individualized Instruction. Food Service, 1974, Westinghouse Learning Corporation, 100 Park Avenue, New York, New York 10017 (Available in Vocational Behavioral Objectives, 56-1112, Series II, \$35.50)

One occupational area in Series II is the Food Service including modules for cook, baker, meat cutter, and waiter/waitress. Each has Vocational Behavioral Objectives, Test Items, Evaluation, and Occupational Information.

HOME ECONOMICS EDUCATION

HOMEMAKING (CONSUMER AND HOMEMAKING)

Comprehensive Homemaking or Home Economics

09.0101

See 7, 8

Consumer Education

09.0104

See 4

OCCUPATIONAL PREPARATION HOME ECONOMICS

Care and Guidance of Children

09.0201

See 1, 3, 9, 14, 15

Clothing Management, Production and Services

09.0202

See 1, 6, 9, 15

Food Management, Production and Services

09.0203

See 1, 2, 5, 9, 10, 12, 13, 14, 15, 16

Home Furnishings, Equipment and Services

09.0204

See 1, 9, 15

Institutional and Home Management and Supporting Service

09.0205

See 1, 10, 15

TRADE, INDUSTRIAL AND TECHNICAL EDUCATION

1. Air Conditioning and Heating Training Program. Corpsman Guide, Office of Economic Opportunity.

Units include performance objectives, materials needed, work record and instructor's record.

2. An Analysis of Fifteen Occupational Clusters Identified by the U. S. Office of Education, T. M. Vestal, N. A. Baker, Jr., Grayson County College, Sherman/Denison, Texas, 1972, 417 pp. (ED 067 474).

Clusters, to be used for occupational counseling, include rationale, methodology, subgroupings into job families and occupational listings. (1) Cluster - Construction: Wood, metal, masonry, electrical, finishings, equipment operators, engineering and supporting occupations. (2) Cluster - Environment: Pollution prevention and control, disease prevention, environmental planning, resource control. (3) Cluster - Manufacturing: Scientist; engineers; technicians; craftsmen; skilled, semi-skilled and unskilled workers.

3. Apprentice Carpenter. Lesson Plan and Apprentice Carpenter, Study Guide and Workbook, 1971, The Aerospace Education Foundation, Washington, D. C.

Lesson plan consists of course, instructional methods, learning outcomes, references, instructional aides, and lesson outline. Study guide units consist of objective, introductory information, questions, and references.

4. Automobile Service Specialist (Tune-up), Orange County Career Development Program, Eatonville, Florida.

Includes tasks, pre-test, job objective and course outline.

5. Automotive Mechanics Occupational Performance Survey. Interim Report, R & D, Series #86, Sidney D. Borchert, Paul B. Leiten, Ohio State University, Center for Vocational and Technical Education, Columbus, Ohio, March 1973, 58 pp. (Superintendent of Documents \$.90 - Stock Number 1780-01153).

Job titles are: Automotive apprentice, automotive mechanic (17.0302); service advisor, job specialist, service manager, garage owner. Task job descriptions. Criteria for appropriate task inventory statements.

6. Basic Drafting. Instructional Units, W. J. Hartman, Curriculum and Instructional Materials Center, Oklahoma State Board of Vocational and Technical Education, Stillwater, Oklahoma, 1972.

Units consist of terminal objectives, specific objectives, suggested activities, instructional materials, references, information sheet, test and answers.

7. Civil Engineering Technology. Educational Needs of the Technical Worker, California State Department of Education, Sacramento, California, 1963, 13 pp.

Includes job analysis.

8. Civil Engineering Technology. Performance Specifications and Training Objectives for the Technician, Coordinating Council for Occupational Education, Olympia, Washington, 1971.

9. Communications Requirements for Technical Occupations, Coordinating Council for Occupational Education, Olympia, Washington, 1970.

Includes definitions and rationale to functions.

10. Course Outline for Bricklaying in the Building Trades, R. E. Purdue, Randolph County, Elkins High School, Elkins, West Virginia, 1973.

Includes performance and behavioral changes of students as observed and tested by the teacher.

11. Course of Study for Brick Masonry and Course of Study for Masonry, Pennsylvania Department of Education, 1973, 27 pp.

Include course objectives, skill competency development job lists. Also tables of coded skill competencies/operations and corresponding information lessons.

Requirements for a Bricklayer, Jack D. Cutler, Berks Vocational-Technical School, Oley, Pennsylvania, 1974.

Includes course requirements for above courses.

12. Curriculum Guide for Building Construction, Dale Parnell, The Oregon Board of Education, Salem, Oregon, February 1972. (\$2.50)

Occupations in cluster include: Carpenter, 17.1001; trowel trades, 17.1099; iron worker; pipe trades, 17.1007; floor layer; painter, 17.1005; and roofer.

13. Curriculum Guide for Electricity - Electronics, Dale Parnell, Superintendent of Public Instruction, The Oregon Board of Education and the Division of Community Colleges and Career Education, Salem, Oregon, September 1969, 88 pp. (\$2.50)

Five key occupations: Electronics assembler (17.1599), electrical repairman (17.1599), electrical appliance serviceman (17.0201), electronics technician, electrician. Includes D.O.T. job titles and description of job skills, task analysis, cluster curriculum objectives and plan, descriptions of occupational specialty courses (circuitry fundamentals, electro-mechanics, communications).

14. Curriculum Guide for Industrial Mechanics, Dale Parnell, The Oregon Board of Education and the Division of Community Colleges and Career Education, Salem, Oregon, September 1969, 127 pp. (\$2.50)

Five key occupations: Automobile mechanic (17.0302), construction equipment mechanic (17.1000), diesel mechanic (17.1200), garage foreman (17.1700), and office machine serviceman (17.0600). Includes D.O.T. job titles and task descriptions, task analysis, cluster curriculum objectives and plan, descriptions of occupational specialty courses (Systems Technology, i.e., mechanical systems, electrical systems, fluid power, hand and power tools; Inspection and Testing; Techniques of Mechanical Maintenance; and Communications Technology.)

15. Curriculum Guide for Metals, Dale Parnell, The Oregon Board of Education and the Division of Community Colleges and Career Education, Salem, Oregon, September 1969, 123 pp. (\$2.50)

Six key occupations: Welder, arc gas-shielded arc, 17.2306; machinist, 17.2302; foundry worker, 17.2399, general; sheet metal worker; welder, combination. Includes D.O.T. job titles and task descriptions, task analyses, curriculum objectives and plan, description of occupational specialty courses (hot metals, machine processes, metal fabrication, communication).

16. Curriculum Guide for Occupational Safety and Health Technicians, Chancellor's Office, California Community Colleges, Sacramento, California, 1972, 259 pp.

Includes basic function, typical and special tasks, duties, and entry requirements.

17. Curriculum Guide for Related Education. Automotive Services, D. E. Treadwell, Beggs Educational Center, Pensacola, Florida, 1972.

Includes task listings, behavioral objectives and tests.

18. Custodial Basic Skills Manual, Washington State Department of Vocational Education, Olympia, Washington.

Manual offers a course guide of step-by-step training procedures to be followed to develop a minimum level of competency for custodians.

19. Developing Programmed-Instructional Materials of Brick-laying. Project Book and Skill Book, H. Thomas Tucker, Sr., The Pretlo Services, Durham, North Carolina, 1974.

20. Electromechanical Technology. Educational Needs of the Technical Worker, California State Department of Education, Sacramento, California, 1963, 14 pp.

Includes job analysis.

21. Fluid Power Technology. A Suggested Two-Year Post High School Curriculum, Fluid Power Foundation, Inc., Garden City, New York, 1972, 116 pp.

Includes Special Abilities Required and Activities Performed by Technicians.

22. Fundamentals of General Appliance Servicing, P. T. Brockwell, Jr., McGraw-Hill Book Company, Inc., New York, New York, 1960.

Includes job skill lists.

23. General Construction Trades. A Curriculum Guide, W. C. Henderson, Bob Patton, State Department of Vocational and Technical Education, Stillwater, Oklahoma, Revised 1972, 509 pp.

Five areas: Carpentry (17.1001); concrete work, plumbing (17.1007); painting (17.1005); and electricity (17.1499). Instructional units include: Objectives, suggested activities for instructor and students, information sheets, transparency masters, job sheets, assignment sheets, test and answers.

24. General Mechanical Trades. A Curriculum Guide, W. Charles Henderson, Bob Patton, Margaret Spann, State Department of Vocational and Technical Education, Stillwater, Oklahoma, Revised 1973, 414 pp.

Six areas: Safety - Tools (17.2302); Measuring - Blueprint (17.0500); Gas Welding and Arc Welding (17.2306); Small Engine (17.3100); Metal Work (17.2399). Units have behavioral objectives, suggested activities for teacher and students, information sheets, assignment sheets, job sheets, visual aids, tests and answers, and transparency masters.

25. General Mining for High Schools, E. R. Hayduk, Pennsylvania State University and the American Electric Power Service Corporation, 46 pp.

Consists of 120 units; behavioral objectives for each unit. Includes these modules: Introduction to Mining, Construction, Cutter, Face Drill, Leader, Shuttle Car, and Roof Bolter, etc.

26. The General Woodworking Core Curriculum. Experimental Curriculum for the New Quincy (Mass.) Vocational Technical School, F. E. Leporini, American Institutes for Research, Pittsburgh, Pa., 1970, 209 pp.

Includes task analysis, performance objectives, and evaluation sets, and learner activity guides.

27. Guidelines for Cooperative Work Experience in Floriculture, Resource Development Education, College of Resource Development, University of Rhode Island, Kingston, Rhode Island, 1973, 26 pp.

Includes competency checklists.

28. Identification of Task and Knowledge Clusters Associated with Performance of Major Types of Building Trades Work, W. A. Bakanis, Washington State University, Pullman, Washington, December 1966, 184 pp. (ED 010 658)

Analyses of tasks and knowledges for these trades: Brick-laying, 17.1004; carpentry, 17.1001; cement finishing, 17.1004; electrical work, 17.1002; iron work, painting, 17.1005; plastering, 17.1008; plumbing, 17.1007; roofing, 17.1010; sheet metal and heating, 17.0100.

29. Individualized Learning Systems (ILS), Oregon Board of Education, Salem, Oregon, 1973. (Available from Continuing Education Publications, Extension Annex, Corvallis, Oregon 97331)

ILS sets contain individualized learning packets, each packet consisting of Purpose, Objectives, Learning Activities, and Post Test. These are the available ILS:

Electronics (Individualized Curriculum for Electronics, ICE), 216 Learning Packets. Student Set \$55.00, Instructor Set \$65.00.

Auto Mechanics, 100 Learning Packets, \$32.50.

Auto Body - Fender Repair, 93 Learning Packets, \$29.00.

Construction, 150 Learning Packets, \$45.00.

Industrial Mechanics, 140 Learning Packets, \$42.50.

Metals, 131 Learning Packets, \$40.00.

Machine Tools, 74 Learning Packets, \$25.00

Drafting, \$37.00. Due to the interdependence of the individual packets within various groups, Drafting is sold in these groups:

Basic Drafting I, \$7.25

Basic Drafting II, \$4.25

Electronics Drafting, \$4.75

Technical Illustration, \$4.25

Descriptive Geometry, \$4.25

Blueprint Reading, \$4.25

Architectural Drafting, \$9.00

Instructors Guide, \$3.25

(Cassette tapes are available for use with Drafting.)

30. Individualized Prescribed Instruction (IPI) for Auto Mechanics. Automotive Blocks, Vance Cox, Marion County Vocational and Technical Center, Fairmont, West Virginia (ongoing program).

Includes performance objective, behavior, success criteria. Consists of Study Guide and Curriculum Management Guide.

31. Individualized Prescribed Instructions. Electronics Block II, D. C. Fundamentals, Unit A, Basic D. C. Concepts, Sub Division 3, Measuring Devices, Vance Cox, Marion County Vocational and Technical Center, Fairmont, West Virginia. (ongoing program)

Consists of pretest, objective statement, evaluation form and post-test.

32. Job Safety Analysis and Training Guide for Coal Mines, John H. Stewart, American Electric Power Service Corporation, Point Pleasant, West Virginia, 342 pp.

Consists of tasks with job knowledges, sequence, potential hazards, recommended procedure.

33. Learn Fast Systems, Inc., R. D. No. 2, Box 429, Yardville, New Jersey, 08620. Individualized Learning System consists of Job Competencies, Performance Objectives, and Individualized Learning Packages. The Learning Packages contain task and unit packages consisting of Rationale, Objective, Learning Activity, Learning Practice and Post Test.

Job Competencies (@ \$10.00 each), Carpentry, Metals, Drafting, Brick Masonry
Performance Objectives (@ \$25.00 each), Carpentry, Metals, Drafting, Brick Masonry
Individualized Learning Packages

Carpentry, \$16.00 per student

Metals, \$16.00 per student

Drafting, \$20.00 per student

Brick Masonry, \$16.00 per student

34. Mechanical Engineering Technology. Performance Specifications and Training Objectives for the Technician, Coordinating Council for Occupational Education, Olympia, Washington, 1970.

35. Masonry, Brick and Blocklayer (Beginner), Orange County Career Development Program, Orlando, Florida, 1973.

Job entry package contains job description, task list and detailing sheets, job prerequisites, pretest, and job objectives. LAP's include goal, objective, activities, study and work sheets, pretest, posttest and evaluation sheet.

36. Occupational Analysis for Engineering Maintenance, T. D. Cullen, R. R. Henrick, K. L. Goldsmith, N. Merchant, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Project, September 1971, 105 pp. \$3.50).

Task analysis for maintenance superintendent, maintenance supervisor, and maintenance worker.

37. Offset Printing, Stanton Career Education Center, Jacksonville, Florida.

Includes task lists and detailing sheets, performance objectives, student activities and information. Jobs include camera man, stripping, plate making, press man and bindery.

38. "Performance Objectives, Job Skills, Job Knowledges," Capital Area Career Center, Ingham Intermediate School District, Mason, Michigan.

The following occupations are covered: Duplicating machine operator (14.0300), cameraman (17.1903), press operator (17.1902), finishing technician (17.1999), composition (17.1901), small business owner, manager - department division, retailing (04.9901), building maintenance man (17.1000), custodian, carpenter (17.1001), heating and air conditioning serviceman (17.0100 or 17.1099), residential electrician (17.1002), industrial electrician (17.1401), electronic technician (16.0108 or 17.1599), office machine serviceman (17.0600), major appliance serviceman (17.0201), production machine operator (17.9900), machinist, welding, auto body repair (17.0301), auto body painter (17.0301), general auto mechanic (17.0302), service station attendant (17.0300), new and used car get-ready (17.0302), parts man (17.0302), small engine repair serviceman (17.3100), cosmetology (17.2602).

39. "Programmed Instruction Individualized Lessons," MDTA and Rehabilitation Research Foundation, Elmore, Alabama, 1966.
Barbering. Tools and Areas
Electronics. Recognizing Circuit Symbols
Servicing Carburetor Air Cleaners

The above include pre- and post-tests and programmed instructional material.

40. Research Project, Sanford Central High School, Sanford, North Carolina.

Behavioral Objectives, Competency Lists, and Modules for clusters listed below. Units for each module include test packages (prerequisites, rationale, objective, learning activity, learning practice), post test, behavioral objectives.

Cluster: Metals. Course: Machine Shop

Cluster: Masonry. Course: Bricklaying

Cluster: Drafting. Course: Introduction to Technical Drafting

Cluster: Drafting. Course: Basic Technical Drafting

Cluster: Drafting. Course: Architectural Drafting

Cluster: Carpentry. Course: Carpentry

41. Residential Carpentry. Instructional Units, Wayman R. Penner, Trade and Industrial Education, State Department of Vocational and Technical Education, Stillwater, Oklahoma, 1973, 1062 pp.

Includes 12 sections of one or more units of instruction. Each instructional unit consists of behavioral objectives, suggested activities for teacher and students, information sheets, assignment sheets, job sheets, visual aids, test and answers, and progress charts.

42. Suggested Basic Course Outlines, Vocational Instructional Services, Vocational Industrial Education, Texas A & M University, College Station, Texas, 1972-73.

Refrigeration and Air Conditioning, Appliance Repair, Automobile Mechanics, Building Trades, Commercial Art, Cosmetology, Drafting, Electrical Trades, Electronics, Machine Shop, Radio and TV, Sheet Metal.

Major blocks are divided into units which consist of minor blocks. Included are task, aim, related knowledge, task detail, suggestions for teaching and references.

43. Suggested Course Outlines, Trade and Industrial Education Services, State Department of Education, Columbus, Ohio.

The following contain course objectives and descriptions. Manipulative skills listed.

Auto Body and Fender Repair, Automotive Mechanic, Welding.

44. Suggested Guides for Training Courses. USOE, Washington, D. C.

The following include job requirements and personal traits required:

Maintenance Man, Building, 1969, 26 pp.

Electronics Assembler, 1969, 13 pp.

Food Service Personnel for the Hospitality Industry, 1969, 145 pp.

Clothing Maintenance Specialist, 1964, 13 pp.

Numerical Control of Machine Tools. Point-to-Point System, 1970, 94 pp.

45. Suggested Two-Year Post High School Curricula, USOE, Washington, D. C.

The following include special abilities, knowledges and skills required:

Architectural and Building Construction Technology, 1969, 110 pp.

Air Pollution Technology, 109 pp.

Electronic Technology, 1966.

Library Technical Assistant, 1971, 419 pp.

Water and Wastewater Technology, 1968, 131 pp.

46. Task Inventories, Nevin Frantz, Jr., University of Georgia, College of Education, Division of Vocational Education, Athens, Georgia.

Construction, Horticulture, Food Service, and Transportation.

47. Task Inventory for the Electronic Technician in Industry, State of Washington, Coordinating Council for Occupational Education, Olympia, Washington, 1970.

Includes Applied Research, Product Development, Production Planning, Manufacturing, Installation and Operation, and Servicing.

48. Task Lists, Trade and Industrial Education Materials Laboratory, College of Education, Ohio State University, Columbus, Ohio.

Task lists for: Air Conditioning and Refrigeration, Auto Body Mechanic, Automotive Mechanics, Cabinet and Mill Work, Carpentry, Custodial Care, Drafting, Electrical Appliance Service, Electric Motor Repair, Heating Systems and Furnace Installation and Repair, Industrial Mechanics, Machine Shop, Plumbing, Radio and T.V. Repair, Remodeling Construction, Residential Wiring, Small Gasoline Engines, Truck Mechanic, Welding.

49. Time Free Modular Competency Based Curriculum, Link Educational Laboratories, Montgomery, Alabama, 1973.

Modules for Auto Body Repair, Brake and Front End, Engine Tune-Up, Transmission, Welding, Air Conditioning and Refrigeration, Auto Service Technician, Radio and TV Repair, Drafting, Electrical Appliance Repair.

Modules are divided into Initial, Intermediate, Final, and Instructional Resources. Each module contains learning objectives, learning activities, materials, competency test, and competency levels. Resources include lists of movies, books and printed matter, filmstrips, transparencies, and list of tools and equipment.

50. Trade Preparatory Training Guides, Nebraska Department of Education, Division of Vocational Education, Lincoln, Nebraska.

Includes teacher responsibilities, trade tasks and competencies.

Drafting, Welding and Cutting, Auto Mechanics Guide, Graphic Arts, Machine Shop, Communications Electronics/Industrial Electronics, Air Conditioning, Plumbing and Pipefitting, Heavy Equipment, Electricity Construction, Television and Radio Repair and Appliance Repair, and Foundry.

51. Using the Principles of Geometry in Building a House. Career Awareness Teaching Unit. Grade Level 10-12, W. H. Triplett, Jr., Guyan Valley High School, Branchland, West Virginia, November, 1973, 23 pp.

Includes general objectives, procedures, student activities, notes and resources, evaluation, and a bibliography of books, films, filmstrips, leaflets, study prints and tape recordings.

52. Vocational Behavioral Objectives. A Guide for Individualizing Instruction Series I (#56-1111, \$25.50) and Series II (#56-1112, \$35.50), 1973, Westinghouse Learning Corp., 100 Park Avenue, New York, New York 10017.

Occupational areas are in Series I: Pre-vocational; Automotive; Building Trades; and Metal Trades. In Series II: Food Service; Building Maintenance; Heating, Refrigeration and Air Conditioning; Business and Office; and Appliance and Vending Machine Repair.

Each occupational area lists Vocational Behavioral Objectives, Test Items, Evaluation, and Occupational Information in modules for individual job titles. The Pre-Vocational Basic Skills Module includes exploratory objectives, basic skills objectives, and evaluations.

Job titles of these modules are: auto body repairman, gas engine repairman, automotive service repairman, diesel engine mechanic, painter, carpenter, brick/stonemason, electrician, plumber/pipefitter, sheet metal worker, welder, cook, baker, meat cutter, waiter/waitress, building maintenance man, groundskeeper, air conditioning and refrigeration mechanic, furnace repairman, general secretary, computer operator, offset duplicator, television repairman, appliance repairman, and vending machine repairman.

TRADE, INDUSTRIAL, AND TECHNICAL EDUCATION

Architectural Technology
(Building Construction)

16.0103

See 45

Civil Technology

16.0106

See 7, 8

Electronic Technology

16.0108

See 45, 47

Electromechanical Technology

16.0109

See 20

Engineering - Related Technology, Other

16.0199

See 21, 34, 45

Office-Related Technology, Other

16.0499

See 45

Miscellaneous Technical Education, Other

16.0699

See 9, 16, 45

Air Conditioning, Heating and Refrigeration

17.0100

See 1, 14, 28, 38, 42, 48, 49, 50, 52

Electrical Appliances

17.0201

See 13, 22, 38, 42, 48, 49, 52

Automotive Servicing

17.0300

See 4, 17, 38, 39, 49, 52

Body and Fender

17.0301

See 29, 38, 43, 48, 52

Automotive Mechanics

17.0302

See 5, 14, 29, 30, 38, 39, 42, 43,
48, 49, 50, 52

Blueprint Reading

17.0500

See 24, 29

Business Machine Maintenance

17.0600

See 14, 38

Construction and Maintenance Trades
(Construction and Mechanics)

17.1000

See 14, 29, 38, 42, 46, 50, 52

Carpentry

17.1001

See 2, 3, 23, 28, 33, 38, 40, 41, 48, 52

Electricity (Commercial)

17.1002

See 2, 28, 38, 50, 52

Masonry

17.1004

See 2, 10, 11, 19, 28, 33, 35, 40, 52

Painting and Decorating

17.1005

See 23, 28, 52

Plumbing and Pipefitting

17.1007

See 23, 28, 48, 50, 52

Dry-Wall Installation

17.1008

See 28

Construction and Maintenance Trades, Other

17.1099

See 36, 38, 44

Custodial Services (Building Maintenance)

17.1100

See 18, 48, 52

Diesel Mechanic

17.1200

See 14, 52

Drafting

17.1300

See 6, 29, 33, 40, 48, 49, 50

Industrial Electrician

17.1401

See 38

Electrical Occupations, Other

17.1499

See 42

Motor Repairman

17.1403

See 48

Electrical Occupations, Other

17.1499

See 23

Industrial Electronics

17.1502

See 50

Radio/Television

17.1503

See 42, 48, 49, 50, 52

Electronics Occupations, Other

17.1599

See 13, 29, 31, 38, 39, 42, 44

Foremanship, Supervision and Management Development

17.1700

See 5, 14

Graphic Arts Occupations

17.1900

See 37, 38, 42, 50

Machine Shop

17.2302

See 15, 24, 29, 40, 42, 44, 47, 50

Sheet Metal

17.2305

See 15, 28, 42, 52

Welding and Cutting

17.2306

See 15, 24, 29, 33, 43, 48, 50, 52

Metal Working, Other

17.2399

See 15, 24, 33

Cosmetology

17.2602

See 38, 42

Quantity Food Occupations

17.2900

See 44, 46, 52

Trade and Industrial Occupations, Other

17.9900

See 27, 29, 38, 46

GENERAL MATERIALS

1. Behavioral Objectives for the Teaching - Learning Process, Curriculum & Instructional Materials Center, Oklahoma State Department of Vocational and Technical Education, Stillwater, Oklahoma, 23 pp.

A unit format consisting of terminal objectives, specific objectives, information sheet, assignment sheets, and a test.

2. Competency-Based Education, An Introduction, Richard W. Burns and Joe Lars Klingstedt, Educational Technology Publications, Englewood Cliffs, New Jersey, May 1973, 169 pp. (\$3.95)
3. Competency Based Instruction. A Strategy to Eliminate Failure, Thomas S. Nagel and Paul T. Richman, Charles E. Merrill Publishing Company, 1300 Alum Creek Drive, Columbus, Ohio 43216 (\$2.50)
4. Competency Based Learning: Technology, Management and Design, Ivan K. Davies, McGraw-Hill, New York, 1971.
5. Constructing Instruction Based on Behavioral Objectives. Manual for Managers of Learning, H. H. Walbesser, and others, Oklahoma State University, Stillwater, Oklahoma, 1971, 111 pp.

Individualized aid for teachers to acquire ability to construct instruction based on behavioral objectives.

6. Criterion-Referenced Measurement: An Annotated Bibliography, Tse-Chi Hsu and M. Elizabeth, Boston, Learning Research and Development Center, University of Pittsburgh, February 1972, 25 pp. (ED 068 531)
7. How to Write and Use Performance Objectives to Individualize Instruction, Volume 4: How to Develop Performance Instructional Activities and Evaluations, Educational Technology Publications, Englewood Cliffs, New Jersey, 1972, 72 pp.
8. LAP - A Tool for Individualizing Instruction, State Department of Education, Division of Occupational Education, Business and Office Education, Raleigh, North

Carolina, 1973, 15 pp.

Explains components, suggested uses, and advantages of using LAP's. Also is a LAP in itself.

9. Preparing Instruction to Implement Objectives, R. M. Robl, C. R. Anderson, E. B. Kurty, Oklahoma State University, Stillwater, Oklahoma, January, 1972, 49 pp.

A workbook to assist teachers in organizing learning activity packages.

10. A Programmed Course for the Writing of Performance Objectives. A Constructed Response Linear Program, 1972, 49 pp., and Writing Performance Objectives. Instructor's Manual for Teachers and Administrators, 1972, 34 pp., B. K. Rose, Program Development Center of Northern California, Butte County Schools Office, Chico, California and Commission on Educational Planning, Phi Delta Kappa, Inc., Bloomington, Indiana.

Provides management guidelines and instructional aids for four training sessions to be conducted with teachers. Suggests management procedures to follow in curriculum development after completing the training sessions.

11. Writing a Unit of Instruction, Bob Patton, State Department of Vocational and Technical Education, Stillwater, Oklahoma, 1972, 62 pp.
12. Task Analysis Inventories, A Method for Collecting Job Information (Stock No. 2900-00163, \$2.60) and Procedures for Constructing and Using Task Inventories (Stock No. 179-1155, \$1.35) Both available from Superintendent of Documents.